

Copper Antifouling Paint Sub-Workgroup 9/9/04 Meeting Notes

In-Person Participants:

Acosta, Vic, DPR
Aquino, Christine, DPR
Edwards, Diane, SWRCB
Flood Harold, DBW
Gregg, Jack, CCC
Kubiak, Rachel, DPR
Lee, Marshall, DPR
Redfield, Tanya, CCC
Singhasemanon, Nan, DPR
Sniderman, Lisa, BCDC
Yee, Betty, RWQCB 5

Phone Participants:

Dobalian, Lesley, RWQCB 9
Blocker, John, County of San Diego, CAC
Candelaria, Linda, RWQCB 8
Chavira, Ray, USEPA Region IX
Elkassabany, Nader, USEPA
Looker, Richard, RWQCB 2
Matuk, Vivian, CCC
Michael, Pete, RWQCB 9
Miller, Jamie, UC Sea Grant Extension
Moran, Kelly, TDC Environmental
Montague, Kathryn, USEPA
Rivera, Ignacio, U.S. Navy, SSC-SD
Seligman, Pete, U.S. Navy, SSC-SD
Trumbo, Joel, DFG
Von Langen, Peter, RWQCB 3

These meeting notes contain highlights of discussion topics, items of continuing interest, and pending action items. If you would like more details, you may want to contact the individual(s) associated with that particular item. Highlighted topics are organized in a bulleted form. Italicized text refers to items of continuing interest, which will likely be part of a future meeting agenda. Pending action items are tasks that require immediate attention. These are denoted as “**Action Item**”. An attendance/contact information list that contains participants’ agency names, email addresses, and telephone numbers is separately attached.

Introductions/Agenda Review:

- Twenty-six individuals (11 in person and 15 by phone) participated in the third Copper Sub-Group meeting. Nan Singhasemanon (DPR) welcomed the participants and announced that several “handouts” were sent out via emails to the workgroup a day prior to the meeting. These files included:
 - The September 2004 version of the bibliography of aquatic studies on copper and antifouling paints (AFPs)
 - Bay Area marina sediment data
 - San Diego marina sampling data and monitoring location map
- Nan introduced Christine Aquino (UC Davis). Christine has recently been hired as a DPR student assistant. She will work primarily on workgroup-related assignments and tasks.
- Pete Seligman announced that he would be retiring in September. Ignacio Riviera will be the new Navy representative to the workgroup. Gina Goff has left the Department of Boating and Waterways (DBW) and is now at the Department of Water Resources. Ruby Pap is no longer with the Bay Conservation and Development Council (BCDC).

News and Developments:

- U.S. EPA staff, Kathryn Montague, Nader Elkassabany, and Ray Chavira (Region IX) provided background on U.S. EPA’s upcoming review of copper/cuprous oxide (including its antifouling

uses) as part of its pesticide tolerance reassessment and registration process. The Federal Insecticide Fungicide and Rodenticide Act and the Food Quality Protection Act require U.S. EPA to review older pesticides (initially registered prior to November 1984) to ensure that the continued use of these pesticides meet current scientific and regulatory standards and is safe to humans and the environment. Ultimately, U.S. EPA produces a risk assessment and makes a registration eligibility decision for each pesticide. U.S. EPA plans to have this decision made by August 2006. For more details on reregistration, you can access the following link: <http://www.epa.gov/oppsrrd1/reregistration/>

U.S. EPA is particularly interested in the literature review and monitoring data assembled by the workgroup. U.S. EPA has not received much interest outside of California on copper oxide with the exception of the U.S. Navy. Thus, the risk assessment process may rely heavily on information developed by the workgroup. The risk assessment could result in significant changes in the registration and future use of copper AFPs.

Kathryn, Nader, and Ray went on to described a particular meeting that occurs very early in the risk process. This meeting was referred to as a “SMART” meeting, where U.S. EPA, United States Department of Agriculture, pesticide registrants, and key stakeholders meet to refine U.S. EPA’s assessment of current pesticide use information. For copper oxide, this event will likely occur around mid-2005. *The workgroup should continue tracking copper oxide reregistration and plan on participating in the SMART meeting.* **Action Item:** Nan will coordinate with Ray for on these future activities.

For more on public participation on the reregistration process and details regarding the SMART meetings go to: <http://www.epa.gov/oppsrrd1/public.htm>.

- Kelly Moran (TDC Environmental) provided a briefing on the reregistration status of another metallic AFP called zinc pyrithione (trade name: Zinc Omadine; chemical name: zinc 2-pyridinethiol-1-oxide). U.S. EPA recently closed the public comment period on August 30, 2004 and will be releasing its registration eligibility decision or RED in the near future.

This pesticide active ingredient (a.i.) has been around since the early 1980’s although it use has been primarily industrial. Over the last several years, zinc pyrithione products have been approved for AFP uses. These products can be toxic to fish and other aquatic organisms at low concentrations. The AFP uses of zinc pyrithione are scheduled to sunset in 2005. Depending on the RED, U.S. EPA may allow these uses beyond 2005. There is concern that zinc pyrithione AFPs may increase in popularity particularly if demand for copper oxide AFPs decreases.

The San Francisco Bay Regional Water Quality Control Board (RWQCB 2) recently submitted a comment letter to U.S.EPA relaying its concern on the AFP uses. The letter also contains references to the workgroup as a potential source of resources on AFPs.

- Vivian Matuk (CCC) briefed the workgroup on the Alternative Antifouling Bottom-Paint Strategies Workshop, which was held in Santa Barbara on August 24, 2004. The workshop explored how copper pollution and alternative bottom paints may affect marine life and boating on the central California coast. The City of Santa Barbara and the University of California's Sea Grant Extension Program co-sponsored the event. This is the first of such workshops held outside of the San Diego area, which may indicate that copper AFP is becoming a concern along the central coast. Vivian prepared an excellent written summary of this event. The summary is provided as an accompanying document to these meeting notes.

- Betty Yee (RWQCB 5) mentioned that Region 5 is starting to consider monitoring for copper, tributyltin, and possibly zinc.
- Linda Candelaria (RWQCB 8) noted that much of Region 8 metal data comes from Orange County through their stormwater permit monitoring. Region 8 has been looking at metals from a number of sources. Thus, staff is trying to coordinate among each other to ensure that some TMDL monitoring can be incorporated into existing monitoring schemes such as stormwater and deminimus permits. For some parts of the Newport Bay watershed, Region 8 would like to be able to distinguish between sources of copper (i.e., boat versus urban runoff).

Assessment Activities:

- Richard Looker (RWQCB 2) presented marina sediment dredging data from San Francisco Bay. An Excel spreadsheet of these data was sent out to the workgroup. Richard has been working on a one-page written summary of the results. **Action Item:** When this summary becomes available, it will be forwarded to the workgroup. Note that Richard will be out of the office until October 18th.

Average bulk sediment copper concentrations ranged from 34 to 148 mg/kg with a mean of 66 mg/kg. The State Water Resource Control Board (SWRCB), in their May 1998 staff report, estimated the ambient sediment copper concentration in San Francisco Bay to be 68.1 mg/kg.

- Lisa Sniderman (BCDC) noted that BCDC's marina survey showed sediment concentrations ranging from 38 to 151 mg/kg. For perspective, the Effects Range Low (ERL) value for copper is 34 mg/kg and the Effects Range Median (ERM) for copper is 270 mg/kg. Sediment data collected by BCDC were all in between the ERL and the ERM values. As worded in the marina survey report, detections that were well above the ERL and "expected" ambient values (68.1 mg/kg for comparison) are notable because they represent an increased probability that adverse biological impacts could result from copper toxicity in the marinas. However, observed sediment copper concentrations are not indicative of high ecological risk because they did not exceed the ERM.

The final San Francisco Bay Marina Water Quality Project report (Marina Survey Report) is now available from BCDC. It can be accessed at:

http://www.bcdc.ca.gov/inside/planning/reports/plan_reports.htm

- A number of workgroup members expected copper concentrations in marina sediment to be higher. However, several members noted that the sediment samples analyzed were made up of homogenized sediment from various depths. Therefore, higher copper concentrations that were expected near the top or biologically active layers might have been diluted by the compositing. Moreover, the workgroup brought up resuspension of contaminated sediment as a potential issue.
- Pete Michael (RWQCB 9) covered recent marina survey results from San Diego Bay. Sampling took place in March 2004 (1st round) and May 2004 (2nd round). An Excel file containing the dissolved copper results from both rounds of sampling was sent out to the workgroup prior to the meeting.

The monitoring of transects through San Diego Bay showed that dissolved copper concentrations increased from the open ocean toward the enclosed South Bay. Elevated copper concentrations

were also observed in and near marinas. Copper concentrations from marina samples from the North, Central, and South Bay regularly exceeded the chronic water quality criteria value of 3.1 µg/L and occasionally exceeded the acute value of 4.8 µg/L. In the end, the survey results showed that in San Diego Bay, elevated dissolved copper levels are not unique to the Shelter Island Yacht Basin. Pete noted that his region has no elaborate plans with the data at this point.

- Pete also provided an update on the San Diego Region Harbor Monitoring Program. The goal of the program is to develop a coordinated monitoring effort of harbors in the San Diego Region to provide water quality status and trends information and to assess the surface water's abilities to support designated beneficial uses. Currently, this includes San Diego Bay, Mission Bay, Oceanside Harbor, and Dana Point Harbor. The Del Mar Boat Basin may be added as the fifth monitoring area, pending permission from the U.S. military.

MEC Analytical developed the program's monitoring plan. Copper monitoring will be a significant part of both the core and focused monitoring programs. The plan will be sent out with these meeting notes.

Region 9 is working to secure funding for the program, particularly from the dischargers and the Surface Water Ambient Monitoring Program (SWAMP). Moreover, Region 9 is exploring collaborative relationships and resource sharing.

- Nan described the literature search on aquatic studies on copper and antifouling paints that he and Christine had prepared. The September 2004 version of the bibliography was introduced. Nan sent copies of this document to the workgroup prior to the meeting.

The September 2004 version was an upgrade over the previous version. It contained relevant references from the initially identified group of studies. Moreover, copper toxicity studies were removed since they have limited usefulness to the workgroup and U.S. EPA has recently referenced over 500 in their copper water quality criteria document. References from the Shelter Island Yacht Basin Copper Total Maximum Daily Load document were added. A number of workgroup members also provided references to additional studies.

In the initial version, the bibliography was divided by the sources from which the references were gathered. The September 2004 was divided into the following categories:

- Copper Fate
 - Monitoring/Distribution
 - Speciation/Complexation
- Copper Analytical Methods Techniques
- Miscellaneous Copper
- Copper AFP
- Miscellaneous AFP

Based on the information gathered, DPR will be developing a fate assessment paper on cuprous oxide since it is the most common copper AFP a.i. This activity is routine for DPR's Environmental Monitoring Branch, particularly for pesticides of water quality concern. Christine will prepare this document. When it has been completed and reviewed, Nan will distribute the document to the workgroup.

- **Action Item:** Nan will assemble a summary of California-specific copper monitoring data that could be relevant in the evaluation of copper AFPs. Specifically, copper data (water column,

sediment, biological) associated with boats, marinas, and high boat-use areas will be noted. Nan will share this document with the workgroup and begin discussions on data gaps and monitoring needs at the next meeting.

Other Items/Next Meeting/Adjourn:

- The second Thursday in November coincides with Veterans Day Holiday. The next meeting date will be Wednesday, November 17th.

The next Copper Sub-Group meeting is scheduled for Wednesday, November 17, 2004 @ 1:30-3:30 p.m.

Meeting Notes Prepared by: Nan Singhasemanon and Christine Aquino, DPR.

Copper Antifouling Paint Sub-Workgroup (Copper Sub-Group)						
Name	Agency	Email Address	Phone Number	Attendance		
				3/11/2004	5/13/2004	9/9/2004
Acosta, Vic	Dept. of Pesticide Regulation	vacosta@cdpr.ca.gov	(916) 445-3908		Yes	Yes
Aquino, Christine	Dept. of Pesticide Regulation	caguino@cdpr.ca.gov	(916) 323-2778			Yes
Arias, Christina	RWQCB 9	ariac@rb9.swrcb.ca.gov	(858) 627-3931	Yes	Yes	
August, Mike	Dept. of Parks & Recreation	maugu@parks.ca.gov	(916) 653-9962	Yes	Yes	
Blocker, John	San Diego Co. Ag. Commissioners	John.Blocker@sdcounty.ca.gov	(858) 694-2755		Yes	Yes
Boles, Jerry	Dept. of Water Resouces	bolesj@water.ca.gov	(530)529-7326	Yes		
Boullion, Tom	Dept. of Water Resouces	tomb@water.ca.gov	(530) 529-7307		Yes	
Byerly, Peggy	Dept. of Pesticide Regulation (Anaheim)	pbyerly@cdpr.ca.gov	(714) 279-7693	Yes		
Candelaria, Linda	RWQCB 8	lcandela@rb8.swrcb.ca.gov	(909) 782-4906	Yes	Yes	Yes
Chavira, Ray	U.S. EPA Region 9	Chavira.Ray@epamail.epa.gov	(415) 947-4218			Yes
Christmann, Rebecca	RWQCB 4	christm@rb4.swrcb.ca.gov	(213) 576-6757	Yes		
Dobalian, Lesley	RWQCB 9	dobal@rb9.swrcb.ca.gov	(858) 637-7139	Yes		Yes
Edwards, Diane	SWRCB	edwad@swrcb.ca.gov	(916) 341-5908	Yes	Yes	Yes
Flood, Harold	Dept. of Boating & Waterways	hfflood@dbw.ca.gov	(916) 263-8165			Yes
George, Robert	U.S. Navy	robert.george@navy.mil	(619) 553-2776			
Gregg, Jack	California Coastal Commission	jgregg@coastal.ca.gov	(415) 904-5246			Yes
Hosea, Bob	Dept. of Fish and Game	Bhosea@ospr.dfg.ca.gov	(916) 358-2954	Yes		
Huckaby, Corinne	RWQCB 3	Chuckaby@rb3.swrcb.ca.gov	(805) 549-3504	Yes		
Johnson, Leigh	UC Extension Sea Grant Program	ltjohnson@ucdavis.edu	(858) 694-2852		Yes	
Kozelka, Peter	U.S. EPA Region 9	kozelka.peter@epamail.epa.gov	(415) 972-3448	Yes		
Kubiak, Rachel	Dept. of Pesticide Regulation	rkubiak@cdpr.ca.gov	(916) 323-5143	Yes		Yes
Lee, Marshall	Dept. of Pesticide Regulation	mlee@cdpr.ca.gov	(916) 324-4269			Yes
Looker, Richard	RWQCB 2	rel@rb2.swrcb.ca.gov	(510) 622-2451	Yes	Yes	Yes
Matuk, Vivian	California Coastal Commission	vmatuk@coastal.ca.gov	(415) 904-6905	Yes	Yes	Yes
Michael, Pete	RWQCB 9	michp@rb9.swrcb.ca.gov	(858) 467-2990		Yes	Yes
Miller, Jamie	UC Extension Sea Grant Program	jammiller@ucdavis.edu	(858) 694-3414		Yes	Yes
Moran, Kelly	TDC Environmental	kmoran@tdcenvironmental.com	(650) 627-8690		Yes	Yes
Redfield, Tanya	Contra Costa County	tredfiel@pw.co.contra-costa.ca.us	(925) 313-2313			Yes
Reid, Mike	SWRCB	reidm@dwq.swrcb.ca.gov	(916) 341-5477	Yes	Yes	
Rivera, Ignacio	U.S. Navy	ignacio.rivera@navy.mil	(619) 553-2373			Yes
Singhasemanon, Nan	Dept. of Pesticide Regulation	nsinghasemanon@cdpr.ca.gov	(916) 324-4122	Yes	Yes	Yes
Sniderman, Lisa	Bay Conservation & Development Council	lisab@bcdc.ca.gov	(415) 352-3646	Yes	Yes	Yes
Von Langen, Peter	RWQCB 3	pvonlang@rb3.swrcb.ca.gov	(805) 549-3688			Yes
Trumbo, Joel	DFG	jtrumbo@ospr.dfg.ca.gov	(916) 358-2952			Yes
Ward, Kim	SWRCB	wardk@dwq.swrcb.ca.gov	(916) 341-5576	Yes	Yes	
Yee, Betty	RWQCB 5	yeeB@rb5s.swrcb.ca.gov	(916) 464-4643		Yes	Yes

Past Members						
Name	Agency	Reason for Leaving		Attendance		
				3/11/2004	5/13/2004	9/9/2004
Goff, Gina	Dept. of Boating & Waterways	agency change		Yes	Yes	
Lee, Derek	Coastal Commission	agency change		Yes		
Pap, Ruby	Bay Conservation & Development Council	agency change		Yes	Yes	
Seligman, Peter	U.S. Navy	retirement		Yes	Yes	Yes
Soderberg, Shiela	RWQCB 3	change in responsibility		Yes		
Interested Party						
Name	Agency	Email Address				
Blossom, Neal	American Chemet	nblossom@chemet.com				
Brunetti, Kathy	Dept. of Pesticide Regulation	kbrunetti@cdpr.ca.gov				
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G. Fred Lee	G. Fred Lee & Associates	gfredlee@aol.com				
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Krause, Bill	Ramkote	ramkote@aol.com				
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Sheids, Ralph	Dept. of Pesticide Regulation	rshields@cdpr.ca.gov				